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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,783	06/29/2001	Kazutoshi Kaji	1743/188	8575

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EXAMINER	
JOHNSTON, PHILLIP A	

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/869,783	KAJI ET AL.	
	Examiner	Art Unit	
	Phillip A Johnston	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 5-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 5-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

1. This Office Action is submitted in response to Amendment filed 11-03-2004, wherein claims 2,4, and 10 were previously canceled, and claims 1 and 9 have been amended. Claims 1,3, and 5-9 are pending.

Examiners Response to Arguments

2. Applicants arguments are moot in view of new grounds for rejection.

Claims Rejection – 35 U.S.C. 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1,3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,578,823 to Taniguchi, and Van der Mast, U.S. Patent No. 5,300,775, in view of Krivanek, U.S. Patent No. 4,831,255.

Taniguchi (823) discloses the following;

(a) A transmission electron microscope that includes an accelerating tube, an energy spectrometer and an electron beam detector, as recited in claim 1. See Column 3, line 22-47; and Column 6, line 21-42;

(b) A controller that detects an element in real time based on the intensity of the beam detected in a predetermined energy window, as recited in claim 1. See Column 6, line 51-64;

(c) The use of inter-image division processing for two energy windows, one including the core loss peak, as recited in claim 1. See Column 7, line 10-24.

(d) The use of inter-image subtraction processing for several energy windows one including the core-loss peak to eliminate background, as recited in claim 5. See Column 4, line 61-67; Column 5, line 1-17; and Column 10, line 50-58.

(e) Controlling the acceleration voltage by energy increments and obtaining a frame memory image, which is a two dimensional elemental map, as recited in claim 7, See Column 6, line 65-67; and Column 7, line 1-9.

(f) An element mapping method, as recited in claim 9. See Column 4, line 7-55.

(g) Use of intensity regulation unit 12 to attenuate the intensity of the picture signal, as recited in claim 3. See Column 9, line 1-31.

Taniguchi (823) fails to teach the use of a scanning transmission electron microscope. However, Van der Mast (775) discloses the use of an STEM for electron energy loss spectroscopy, as recited in claims 1 and 9. See Column 2, line 18-20; Column 6, line 57-68; and Column 7, line 1-17.

Therefore it would have been obvious to one of ordinary skill in the art that the element detecting apparatus and method of Taniguchi (823) can be modified to use the STEM of Van der Mast (775), to provide an electron beam that is step-wise

scanned across the specimen, thereby performing spectral analysis imaging in energy loss spectroscopy (EELS).

The combination of Taniguchi (823) and Van der Mast (775), as applied above, fails to teach the use of an electron beam detector having multiple detecting sections corresponding to the electron beam energy. However, Krivanek (255) discloses an electron beam detector 15, which contains a large number of independent detection channels, and while the beam is swept across the active area, electrons having a particular energy are always incident on the same detector element, as recited in claims 1 and 9. See Column 4, line 23-33; and Column 5, line 54-64.

Therefore it would have been obvious to one of ordinary skill in the art that the element detecting apparatus and method of Taniguchi (823) and Van der Mast (775) can be modified to use the detector of Krivanek (255), to provide a detector consisting of a large number of elements which detect a major portion of the spectrum simultaneously, thereby increasing the energy resolution of the spectrometer.

Conclusion

5. The Amendment filed on 11-03-2004 has been considered but the arguments are moot in view of new grounds for rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor John Lee can be reached at (571) 272-2477. The fax phone number for the organization where the application or proceeding is assigned is 703 872 9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ

January 14, 2005